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BACKGROUND OF THE INVENTION

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payment is made as prepayment, postpayment, payment by installments, or the like and the goods are delivered as predelivery, postdelivery, delivery by installments, or the like. In the incomplete transaction, when the transaction is started with the prepayment or the predelivery of goods, the contents of the transaction have to be continuously managed until the delivery of the goods or the payment is completed. As for the incomplete transaction, whether the timing to sum up the sales is set to the start of the transaction or the end of the transaction (at the time of completion of the payment of balance or at the time of the delivery of goods) is determined as necessary, and it is necessary to sum up the sales at the determined timing.

However, in the conventional sales of goods, there are: the case where systems are provided for POS terminals in accordance with the kinds of incomplete transactions such as transaction of prepayment and postdelivery of goods, transaction of predelivery of goods and postpayment, and the like and various transactions are individually managed every system; and the case where the incomplete transactions are managed on the basis of slips independently of such systems. Therefore, in order to perform the management of all of the incomplete transactions, the grasp of the situations, and the like, it takes long time, it is difficult to perform such management and grasp, and

there is also a possibility that they are incorrectly performed.

SUMMARY OF THE INVENTION

5 According to the invention, there is provided a transaction managing apparatus for a POS terminal, in which management of all of the incomplete transactions, a grasp of situations thereof, and the like can be correctly performed in a short time and the kind of
10 incomplete transaction can be also correctly changed in a short time.

 A transaction managing apparatus for a POS terminal according to the invention is characterized by comprising: a transaction defining unit for defining a
15 plurality of kinds of incomplete transaction types by combining a plurality of predetermined categories; and a management control unit for designating one of the plurality of kinds of incomplete transaction types and managing and controlling the transaction from the start
20 to the end thereof in a lump by an interactive operation with the operator. According to the invention, therefore, the plurality of incomplete transactions can be controlled and managed in a lump by one system, so that the management of all of the
25 incomplete transactions, the grasp of situations thereof, and the like can be correctly performed in an extremely short time. It is also possible to correctly

change the control and management of the incomplete transaction in a short time merely by changing the designation of the incomplete transaction type.

There are the following categories to define the incomplete transaction types.

- (1) Method of tender such as prepayment, postpayment, payment by installments, or the like.
- (2) Setting of necessity/unnecessity of prepayment.
In case of necessity, the lowest percentage, the lowest amount, or the like is set.
- (3) Term for payment
- (4) Delivering method such as predelivery, postdelivery, delivery by installments, or the like
- (5) Scheduled delivery date in case of predelivery, postdelivery, or the like
- (6) Setting of permission/inhibition of predelivery.
For example, when a paid amount does not reach the price of goods, whether the delivery is possible or not is set.
- (7) Sales sum-up timing at the time of the start of the transaction, the completion of the payment, the completion of the transaction, or the like

The transaction defining unit of the present invention defines the incomplete transaction types by

combination of the categories in which the sales sum-up timing is set to the timing upon occurrence of the transaction, to the timing at which the prepayment of a total amount is necessary, and to the timing at which the delivery of goods is performed later on another day. When the incomplete transaction of the type A as a deferred pickup transaction on the principle of occurrence is designated, the management control unit executes a prepaying process at the start of the transaction and a delivering process upon completion of the transaction. That is, as processes upon prepayment at the start of the transaction, the following processes are executed: an issue of a slip number of the incomplete transaction; an input of a delivery date of goods; a registration of goods; a registration of an amount of payment; a confirmation of the payment of the total amount; a display of an error in the case where the payment is not made yet; an issue of a customer copy with the slip number; and a sum-up of the sales.

As processes upon delivery at the time when the transaction is completed, a display of incomplete transaction information by the input of the slip number, a registration of the delivery, and a termination of the incomplete transaction are executed.

As for the deferred pickup transaction on the principle of completion of the type B, the transaction defining unit forms type code information having a

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With respect to the deferred payment transaction on the principle of occurrence of the type C, the transaction defining unit forms type code information

5 having a combination of the categories in which the
sales sum-up timing is set to the timing upon
occurrence of the transaction, to the prepayment is
unnecessary, and to the delivery of goods is set to a
predelivery. When the incomplete transaction of the
10 type C as a deferred payment transaction on the
principle of occurrence is designated, the management
control unit executes the prepaying process at the
start of the transaction and the process upon payment.
That is, as processes upon prepayment at the start of
15 the transaction, the following processes are executed:
namely, an issue of a slip number of the incomplete
transaction; an input of a delivery date of goods; a
registration of goods; a registration of an amount of
payment including a zero amount; an issue of a customer
20 copy with the slip number; a registration of a
delivery; and a sum-up of the sales. As processes upon
payment, a display of incomplete transaction
information by the input of the slip number, a
registration of the amount of payment, and a
25 termination of the incomplete transaction in the case
where a balance is equal to 0 are executed.

As for the deferred payment transaction on the

principle of completion of the type D, the transaction defining unit forms type code information having a combination of the categories in which the sales sum-up timing is set to the timing upon completion of the transaction, the prepayment is unnecessary, and the delivery of goods is set to a predelivery. When the incomplete transaction of the type D as a deferred payment transaction on the principle of completion is designated, the management control unit executes the prepaying process at the start of the transaction and the process upon payment. In other words, as processes upon prepayment at the start of the transaction, the following processes are executed: namely, an issue of a slip number of the incomplete transaction; an input of a delivery date of goods; a registration of goods; a registration of an amount of payment including a zero amount; a registration of a delivery; and an issue of a customer copy with the slip number. As processes upon payment, the following processes are executed: namely, a display of incomplete transaction information by the input of the slip number; a registration of the amount of payment; a sum-up of the sales in the case where a balance is equal to 0; and a termination of the incomplete transaction. The type C differs from the type D only to the point that the sales sum-up timing in the type C is set to the start of the transaction and that in the type D is set to the completion of the

transaction.

The transaction defining unit has, for example, an incomplete transaction management table, a type code table, an incomplete transaction line item information table, and a payment information management table. The incomplete transaction management table stores basic management information such as store number, incomplete transaction slip number, type code, transaction serial number upon occurrence, date and time of occurrence, customer number, requested amount, amount of down payment, balance, scheduled delivery date, delivery completion flag, sum-up possible/impossible flag, totalization completion flag, and the like. The type code table is designated by the type code in the incomplete transaction management table and stores category combination information such as sales sum-up timing, prepayment necessary/unnecessary flag, predelivery possible/impossible flag, method of tender, delivering method, and the like. The incomplete transaction detail information table is designated by the incomplete transaction slip number in the incomplete transaction management table and stores goods management information such as goods code, unit price, quantity, discount information, and the like. Further, the payment information management table is designated by the incomplete transaction slip number in the incomplete transaction management table and stores

provided a recording medium which stores a management control program, wherein the management control program comprises the steps of: defining a plurality of kinds of incomplete transaction types by combining a
5 plurality of predetermined categories; and designating one of the plurality of kinds of incomplete transaction types by an interactive operation with the operator and managing and controlling processes in a lump from the beginning of the transaction to the end.

10 The invention provides a transaction system, a plurality of terminal apparatuses are connected through a network to a server for managing transaction information, and each of those terminal apparatuses comprises: a transaction defining unit for defining a
15 plurality of kinds of incomplete transaction types by combining a plurality of predetermined categories; and a management control unit for designating one of the plurality of kinds of incomplete transaction types by an interactive operation with the operator and managing
20 and controlling processes in a lump from the beginning of the transaction to the end.

The above and other objects, features, and advantages of the present invention will become more apparent from the following detailed description with
25 reference to the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	

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Fig. 1 is an explanatory diagram of a POS system (point of service system) to which transaction managing apparatus and method of the invention are applied. The POS system comprises a plurality of POS terminals 10-1 and 10-2, ~~an~~^a LAN 12, a POS server 20, a server file 22, a host system 24, and a host file 26. Input/output apparatuses for POS such as bar code readers 14-1 and 14-2, printers 16-1 and 16-2, card readers 18-1 and 18-2, and the like are provided for the POS terminals 10-1 and 10-2 as necessary. Although fig. 1 shows an example of the POS system of a large scale, in case of a POS system of a middle scale, the system is constructed by the POS server 20, server file 22, and POS terminals 10-1 and 10-2. Further, in case of a system of a small scale such as a private store or the like, there is a case where the POS system is constructed only by the POS terminals 10-1 and 10-2. Such a POS system is installed in a store or the like of the distribution retail business, performs a settlement by cash, a credit card, or the like in association with a purchase of goods, and sums up a

result of settlement. In the invention, each of the POS terminals 10-1 and 10-2 has a function to perform management and a control in a lump with respect to what is called an incomplete transaction in which the payment, the delivery of goods, and the like are performed at the different dates/hours in addition to the normal transaction in which the settlement of payment and the receipt of goods are performed at the time of purchase.

Fig. 2 shows an example of a program structure of the POS terminal 10-1 in Fig. 1. The POS terminal 10-1 is provided with: a POS application 28; a retail application frame work technology 30 as middle software; an OS 32; and an IOPOS 34 for standardizing the input/output apparatuses for the purpose of POS. The bar code reader 14-1, printer 16-1, and card reader 18-1 are connected to the IOPOS 34, thereby enabling them to be handled as standardized input/output apparatuses as compared with the retail application frame work technology 30. The retail application frame work technology 30 also communicates with the POS server 20 in Fig. 1. The function of the transaction managing apparatus for an incomplete transaction according to the invention is realized by the retail application frame work technology 30 and POS application 28 in the POS terminal 10-1 in Fig. 2.

Fig. 3 is a block diagram of a functional

construction of the transaction managing apparatus according to the invention which is provided for the POS terminals 10-1 and 10-2 in Fig. 1 and is used for managing and controlling the incomplete transaction in

5 a lump. The transaction managing apparatus of the invention is constructed by a transaction defining unit 36 and a management control unit 38. A database 40 is provided for the transaction defining unit 36.

Input/output apparatuses such as incomplete transaction
10 picture plane display unit 42, key input unit 46, bar code reader 14, slip issuing unit 48, and the like are provided for the management control unit 38. When considering the correspondence with the program structure in Fig. 2, the function of the transaction
15 defining unit 36 is realized by the retail application frame work technology 30 and the management control unit 38 is realized by the POS application 28. The transaction defining unit 36 defines a plurality of kinds of incomplete transaction types by combining a
20 plurality of predetermined categories with respect to the incomplete transaction. In association with the definition of the incomplete transaction types, an incomplete transaction management table 50, a type code table 52, an incomplete transaction detail information
25 table 54, and a payment information management table 56 are provided for the transaction defining unit 36. Among them, the type code table 52 functions as a

definition table in which a plurality of kinds of incomplete transaction types are defined by combining a plurality of categories. The management control unit 38 designates one of the incomplete transaction types defined by the transaction defining unit 36 by the interactive operation with the operator and manages and controls processes in a lump from the beginning of the transaction to the end. In the embodiment, in the transaction defining unit 36, since it is assumed that four types A, b, C, and D are defined as an example as will be explained hereinlater, a type A management control unit 58, a type B management control unit 60, a type C management control unit 62, and a type D management control unit 64 are provided for the management control unit 38. Further, incomplete transaction information 66 and normal transaction information 68 are provided for the database 40. Each transaction information formed by the transaction operation of the POS terminal is recorded. An item name table 70 and a price lookup table (PLU) 72 are provided for the database 40. The item name table 70 is constructed by an item number code and an item name. The item number code and the item name can be recognized with reference to the item name table 70 based on the code read out by the bar code reader 14. The price lookup table 72 is constructed by the item number code and the price. Therefore, the price can be

recognized by seeing the price lookup table 72 on the basis of the item number code derived with reference to the item name table 70.

5 Figs. 4A and 4B are explanatory diagrams of the details of each table provided for the transaction defining unit 36 in Fig. 3 and its link structure. The incomplete transaction management table 50 has basic information for incomplete transaction. That is, the incomplete transaction management table 50 is provided
10 with: a store number, an incomplete transaction serial number (incomplete transaction slip number), a type code indicative of an incomplete transaction type, a transaction serial number upon occurrence, date and time of occurrence, a customer number, a status code,
15 final updating date and time, an employee ID upon occurrence, a requested amount, an amount of down payment, a balance, a scheduled delivery date, a delivery completion flag, a sum-up possible/impossible flag, a totalization completion flag, and the like.
20 The incomplete transaction detail information table 54 and payment information management table 56 can be referred to on the basis of the store number and the incomplete transaction serial number in the incomplete transaction management table 50. A store number, an
25 incomplete transaction serial number, a line item number, line item information, and the like have been stored in the incomplete transaction detail information

table 54. A store number, an incomplete transaction serial number, a payment processing store number, a transaction serial number upon payment, date and time of payment, a paid amount, a kind of tender, an employee ID upon payment, and the like have been stored in the payment information management table 56. The type code table 52 can be referred to on the basis of the type code in the incomplete transaction management table 50. The type code table 52 is a table for defining a plurality of kinds of incomplete types by combining a plurality of predetermined categories in the transaction defining unit 36 in Fig. 3. In the embodiment, a plurality of categories such as type code, sum-up timing, payment necessary/unnecessary flag, predelivery possible/impossible flag, method of tender, delivering method, and the like are provided in the type code table 52. The type of incomplete transaction is determined by a combination of those categories. Each category in the type code table 52 will now be described as follows. First, a timing at the start of the transaction, a timing upon completion of the payment, a timing upon completion of the delivery, and the like can be set as sum-up timings. The prepayment necessary/unnecessary flag is used to set the presence or absence of the necessity of the prepayment in the incomplete transaction. In this case, if the prepayment is necessary, the lowest

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Figs. 5A to 5D are explanatory diagrams of a type code table in which four types A, B, C, and D have been

defined as types of the incomplete transaction. Fig. 5A shows a type code table 74 for the deferred pickup transaction and on the principle of occurrence corresponding to the type A. The incomplete transaction of the type A is an unsettled transaction of the prepayment of a total amount and is a deferred pickup transaction on the principle of occurrence in which the sales are summed up upon occurrence of the transaction. Therefore, in the type code table 74 for the deferred pickup transaction and on the principle of occurrence, the type code A is first defined. Subsequently, "upon occurrence of transaction" is defined as a sum-up timing. "necessary" is defined as a prepayment necessary/unnecessary flag. "total amount" is defined as attribute information. "postdelivery" is defined as a delivering method. Thus, the type designation of the incomplete transaction by the three basic categories is performed. Further, "after 5 business days" is set as a default of the scheduled delivery date. Fig. 5B is an explanatory diagram of a type code table 76 in which the incomplete transaction of the type B is defined. The incomplete transaction of the type B is an incomplete transaction of the prepayment of a total amount and is a deferred pickup transaction on the principle of completion in which the sales are summed up upon completion of the transaction. Therefore, in the type code table 76 for

which the incomplete transaction is started and
"transaction upon delivery" (including "transaction
upon payment") in which the incomplete transaction is
completed are displayed. When the menu of "transaction
5 upon payment" indicative of the start of the incomplete
transaction is selected, the processing routine
advances from step S3 to step S4. The process upon
payment according to the type designated at that time
is executed. When the start of the incomplete
10 transaction is not selected in step S3, whether the
incomplete transaction delivery has been selected or
not is discriminated in step S5. If the delivery is
selected, step S6 follows and the process upon delivery
according to the slip number is executed. The
15 processes in steps S1 to S6 are repeated until there is
an end instruction to the POS terminal in step S7.
When the incomplete operation key is not depressed in
step S1, the processing routine advances to the process
for the normal transaction (not shown).

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(Deferred pickup transaction)

Fig. 7 is a flowchart for a process upon
prepayment in step S4 in Fig. 6 in the case where the
incomplete transaction type A as a deferred pickup
25 transaction on the principle of occurrence has been
designated. In the process upon payment for starting
the transaction in the deferred pickup transaction on

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Figs. 8A to 8D and 9 are explanatory diagrams of operation picture planes of the POS terminal in the

process upon payment of the deferred pickup transaction on the principle of occurrence in Fig. 7. Fig. 8A shows a sales registration picture plane 82 shown as an initial picture plane of the POS terminal. A bar code display frame 84 and a goods information list 85 which are used for the normal sales registration are displayed in an empty state onto the sales registration picture plane 82. Further, a check box 86 for the incomplete transaction is provided on the lower side.

In the normal sales registration, when a bar code scan of the goods is performed, a bar code (numeral) is automatically displayed in the bar code display frame 84 (it can be also manually inputted by a key input) and a name, a price, and the like of the goods are displayed in the goods information list 85. Therefore, the start of the incomplete transaction is first declared. As for the declaration of the start of the incomplete transaction, the check box 86 of the incomplete transaction on the sales registration picture plane 82 is selected by clicking the mouse, depressing the operation key, pressing a touch panel, or the like, thereby inverting it to a state shown in black (hereinbelow, this operation is merely referred to as "selection of check box"). The screen is switched to an incomplete transaction menu picture plane 88 of Fig. 8B by the declaration of the start of the incomplete transaction. Check boxes 90 and 92 are

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Figs. 10A to 10E are explanatory diagrams of operation picture planes for the process upon delivery in the incomplete transaction type A in Fig. 9. When the declaration of the incomplete transaction on the sales registration picture plane in Fig. 10A is selected by the check box 86, since the screen is switched to the incomplete transaction menu picture plane 88 of Fig. 10B, the transaction upon delivery is designated by selecting the check box 92. Thus, the screen is switched to a slip number input picture plane 108 of Fig. 10C. Therefore, by inputting the slip No. "0000001" recorded on the received customer copy slip, the screen is switched to an incomplete transaction confirmation picture plane 112 of Fig. 10D. Status display boxes 116 and 118 with respect to a sales date, a sales amount, a balance, a delivery date, completion of payment, and "delivered" are provided for the incomplete transaction confirmation picture plane 112 in correspondence to the slip number, respectively. When the registration key is operated, therefore, the status display box 118 of "delivered" is set to "delivered" and a series of incomplete transaction is finished. In the case where the screen is switched to an incomplete transaction confirmation picture plane 112 of Fig. 10E when the slip number is inputted in Fig. 10C, since the status display box 118 has already been set to "the goods has already been delivered", a

message indicating this fact or the like is displayed and a series of processes is finished.

Fig. 11 is a flowchart for a process upon payment in the deferred pickup transaction on the principle of completion corresponding to the incomplete transaction type B. In the process upon payment in the deferred pickup transaction on the principle of completion, the check box 86 of the incomplete transaction is clicked on the sales registration picture plane 82 as shown in Fig. 8A, the check box 90 of the transaction upon payment is selected on the incomplete transaction menu picture plane 88 in Fig. 8B, and subsequently, the check box 100 of the deferred pickup transaction (on the principle of completion) is selected on the incomplete transaction type selection picture plane 94 of Fig. 8C, thereby activating such a process upon payment. First, in step S1, the delivery date of goods is inputted by using the same delivery date input picture plane 104 as that of Fig. 8D. Also in this case, "after 5 business days" of a default as a scheduled delivery date set in the type code table 76 in Fig. 5B is displayed. If it is necessary to correct the delivery date, it is corrected by a manual input or the like. Subsequently, in step S2, a registration of the goods is performed by reading the bar code of the goods by using the bar code reader or the like in a manner similar to the case of the normal transaction.

An amount of payment is registered in step S3. In this case, since it is recognized from the type code table 76 in Fig. 5B that the prepayment is necessary and the total amount is necessary, when it is confirmed in step S4 that the total amount has been paid, a customer copy with the incomplete transaction slip number is issued in step S5. If the total amount is not paid in step S4, an error display or the like is performed in step S6. The registration of the paid amount from step S3 is executed again. In the process upon payment in the deferred pickup transaction on the principle of completion in Fig. 11, a point that the sum-up of sales amounts is not performed in the process upon payment differs from the case of the deferred pickup transaction on the principle of occurrence of the type A shown in Fig. 7.

Fig. 12 is a flowchart for a process upon delivery in the deferred pickup transaction on the principle of completion which is executed at the time of the delivery of goods after the process upon payment in Fig. 11. Also in the process upon delivery, first, when the check box 86 of the incomplete transaction is selected on the same sales registration picture plane 82 as that of Fig. 10A and the check box 92 upon delivery is selected on the incomplete transaction menu picture plane 88 of Fig. 10B, the slip number input picture plane 108 of Fig. 10C is displayed. By

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the deferred payment transaction (on the principle of completion) is selected with respect to the incomplete transaction type selection picture plane 94 of Fig. 14C, so that the process is started. When the process is started, an input picture plane 115 of the delivery date of goods in Fig. 14D is displayed in step S1. "delivery on the appointed day (19990923)" which has been set in the scheduled delivery date in the type code table 80 in Fig. 5D is displayed as a default in a date input frame 115-1 on the input picture plane of the delivery date of goods. Subsequently, in step S2 in Fig. 13, the bar code of the goods is read by using the bar code reader, thereby registering the goods in a manner similar to the normal transaction. When the registration of the goods is finished, in this deferred payment transaction, since it is recognized from the type code table 80 in Fig. 5D that the delivering method has been set to "predelivery" and the scheduled delivery date has been set to "appointed day", an incomplete transaction confirmation picture plane 116-1 of Fig. 14E is displayed in order to confirm the delivery. Therefore, it is confirmed that when the registration key is clicked with respect to the incomplete transaction confirmation picture plane 116-1, a status display box 126 of "delivered" on the incomplete transaction confirmation picture plane 116-1 is set to "delivered". An amount of payment is

registered in step S4. In this deferred payment transaction, since it is valid, even if the amount of payment is equal to zero, the zero amount of payment is registered. A customer copy with the incomplete transaction slip number is issued in step S5. Since the deferred payment transaction is based on the principle of completion, the sum-up of the sales is not performed at this time point of the process upon payment.

Fig. 15 shows a process upon payment in the incomplete transaction type D which is executed in the case where there is a balance in the process upon payment in Fig. 13. With respect to the process upon payment of the deferred payment transaction, the check box 86 of the incomplete transaction on the sales registration picture plane 82 is selected as shown in Fig. 16A and the incomplete transaction is declared and the check box 92 of the transaction upon delivery is selected on the incomplete transaction menu picture plane 88 of Fig. 16B, so that the screen is switched to the slip number input picture plane 115 of Fig. 16C. Therefore, in the paying process of the deferred payment transaction (on the principle of completion) in Fig. 15, first, when the incomplete transaction slip number recorded on the customer copy is inputted in step S1, an incomplete transaction confirmation picture plane 116-2 of Fig. 16D is displayed in step S2.

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occurrence. The processes from the input of the delivery date of goods in step S1 to the issue of a customer copy with the incomplete transaction slip number in step S5 are substantially the same as those in steps S1 to S5 for the process upon payment in the incomplete transaction type D (deferred payment transaction on the principle of completion) of Fig. 13. Since the transaction is based on the principle of occurrence in addition to those processes, Fig. 17 differs from Fig. 13 with respect to a point that the sales are summed up in step S6.

Fig. 18 is a flowchart for a process upon payment which is executed later on another day in the case where the balance is not equal to zero in the process upon payment in Fig. 17. Although the process upon payment is fundamentally the same as the process upon payment of the incomplete transaction type D (deferred payment process on the principle of completion) shown in Fig. 15, since the transaction is based on the principle of occurrence, Fig. 18 differs from Fig. 15 with respect to a point that the incomplete transaction is completed without summing up the sales in step S7. The other points are substantially the same as those in Fig. 15.

Figs. 19A and 19B show specific examples of a list display which can be displayed by the transaction managing apparatus according to the invention in Fig.

plane classified for each of the types A to D can be displayed. Further, also with respect to the unpayment customers who do not come to pay for the goods even after the expiration of the term for payment, lists of unpayment customers can be displayed as for all of the incomplete transactions and every type. Further, a list of payment situations can be displayed.

Figs. 20A and 20B show another embodiment of a table structure which is provided for the transaction defining unit 36 in Fig. 3. In this table structure, an option table 136, a payment schedule information table 138, a discount information table 140 are further added to the tables of Figs. 4A and 4B. In association with them, an option code and a payment schedule code are newly added to the incomplete transaction management table 50. The option code is linked to the option table 136. Handling methods for the unpayment persons such as option code, incomplete transaction longest period, method after the elapse of the longest period, commission on postpayment, and the like are defined in the option table 136. The payment schedule code added to the incomplete transaction management table 50 is linked to the payment schedule information table 138. Information regarding the payment by installments such as payment schedule code, lowest percentage of prepayment, the number of paying times, term for payment, payment schedule, and the like is

defined in the payment schedule information table 138. Further, subsequent to the store number and the incomplete transaction serial number, information regarding the discount such as line item number,
5 discount information, and the like is defined in the discount information table 140 which is linked by the store number and the incomplete transaction serial number in the incomplete transaction management table
10 50. As mentioned above, as a table structure of the transaction defining unit 36 in Fig. 3, the contents of the incomplete transaction can be defined in detail as necessary by the table structure with respect to a proper category of the incomplete transaction and, further, items which determine the transaction
15 contents. The item contents of each table can be properly defined as necessary in accordance with the contents of the incomplete transaction.

As described above, according to the invention, a plurality of kinds of incomplete transaction types are
20 defined in combination of a plurality of predetermined categories, one of the incomplete transaction types is designated by the interactive operation with the operator, and the processes from the start of the transactions to the end can be managed and controlled
25 in a lump, so that a batch control and a batch management of a plurality of incomplete transactions can be performed by one system. Therefore, management

of all of the incomplete transactions, a situation
grasp, and the like which have been difficult so far
can be accurately performed in an extremely short time.
Further, since the incomplete transactions are
5 classified into types according to the combination of
the categories, the management control method of the
incomplete transaction can be accurately changed in a
short time merely by designating the type.

Although the above embodiment relates to the
10 example of the transactions of four incomplete
transaction types A to D defined by the type code table
in Figs. 5A to 5D, the incomplete transaction type can
be arbitrarily determined as necessary by a plurality
of combinations of the categories including at least
15 the sum-up timing, prepayment necessary/unnecessary
flag, and delivering method. In the actual incomplete
transaction, it is not limited to the case of a
plurality of types but there is also a case where it
has an incomplete transaction of only a specific type.
20 In such a case, therefore, the processes regarding the
incomplete transaction of the type which has previously
been defined are executed merely by declaration of the
incomplete transaction. The invention further provides
a computer-readable recording medium on which an
25 incomplete transaction managing program has been
recorded. Therefore, as a recording medium for this
purpose, a proper portable recording medium such as FD,

CD-ROM, DVD, or the like can be used. A program for incomplete transaction which is stored in the recording medium has the function of the transaction defining unit 36 and the function of the management control unit 38 in Figs. 4A and 4B. In this case, since the transaction defining unit 36 is realized by, for example, the retail application frame work technology 30 in Fig. 2, an independent program in this portion can be realized. Since the program for the management control unit 38 is realized as a POS application 28, an independent program in this portion can be realized.

The invention incorporates many proper modifications and variations without departing from the objects and advantages of the invention. Further, the invention is not limited by the numerical values shown in the embodiment.